

CONTINUOUS IMPROVEMENT PROJECT DATABASE

DIVISION 3 PROJECTS

Project Name	Project Description	Division	Project Year	Contact Name	Contact Number	Project Category
Self-Contained Hydraulic System for PM's	The old process for performing salt spreader PM's required taking a truck, loader, and additional operator out of regular service. The salt spreader was then installed on the truck in order to perform the semi-annual PM's. To solve this problem a self-contained hydraulic pumping system was developed to eliminate truck, loader, and additional operator. One single transportation worker can now perform the PM's. Use of the self-contained hydraulic system has generated annual savings to Division 3 of \$23,553 per year. This is a result of saved equipment costs and added labor. The cost of the system is prorated for a five-year life.	Div 3	2009	Allen Brinson	(910) 347-5223	Dollar Savings
Fence Post Puller	Prior method of post removal required the employee to manually pull up on the post while moving the post back and forth. This placed the employee at risk for back injury. Often this process was not successful and some employees used a backhoe to remove the post which can cause the post to be damaged and unable to be reused and/or the post exits the ground forcefully and can strike employees nearby. Sometimes a shovel was used to dig the post out. Under the proposed method using the puller tool the post is under control and exits the ground at a controlled rate. The employee uses the fulcrum based tool enhancing safety to the member, rate of production and the re-use of the post.	Div 3	2009	C Francka	(910) 371-2372	Safety Improvement
Road Oil Coordination	With pavement preservation becoming a goal of maintenance, more coordination was necessary with other departments for maximum efficiency. Sampson Maintenance and Road Oil worked together to create a road oil program that helped both units achieve their goals. The patching operation and road oil operation were coordinated to work off of the same plan. Using a road conditioning survey, the CME identified roads in a segment of the county that qualified for possible road oil treatment and a map was marked using highlighters. The CME and Road Oil supervisor rode together on each road, and identified and agreed on needed treatment. A new map and spreadsheet were created with each road numbered in sequential order. All patching and crack pouring were performed well ahead of schedule.	Division 3 - Sampson County Maintenance	2009	Carrie Holland	(910) 592-1434	Communications
Improvements to the Driveway Permit Applications Process	Problem: Over 100 driveway permit applications are received yearly in our District. A hand-written logbook was used to record receipt at the Maintenance Office but it provided no way to quickly generate reports. It may take days or months for the application to be investigated and sent to the District for final determination. When an applicant called about the status of his application, it was often difficult to quickly get the information. Various letters sent during the application review were copies of old form letters. A required list of Special Provisions was assembled using a cut and paste method from previous applications. Required detail attachments were copies of old sketches used for decades. Time and money was spent sending engineers' plans back and forth for revisions until acceptable. Solution: A database was created that is shared by District and Maintenance personnel to track driveway permit applications. This database allows Maintenance personnel to record the application data when received and subsequent actions taken, for District personnel to view the progress of the application process, for standard letters to be easily generated without additional data entry, for the Special Provisions to be standardized, and for reports to be easily generated. Detail drawings were recreated in CADD, converted to pdf files, and links created in the database for easy printing. Engineers' plans are now sent via email and one copy plotted for review. Multiple drawing sets are not required until everything is finalized.	Division 3, District 1	2008	Karen Arriola	(910)-346-2040	Customer Service
Mulching ROW	Problem: Excess growth on DOT right of way needed to be removed in an environmentally friendly way. Solution: Contacted a local tree mulching company for removal of trees and vegetation by mulching on site.	Operations- Division 3	2007	L.E. Reynolds	(910) 592-1434	Energy and Environment
Self-Contained Hydraulic System For Salt Spreader PMs	Problem: Old process for performing salt spreader PMs required taking a truck, loader, and additional operator out of regular service. Salt spreader was then installed on the truck in order to perform semi-annual PMs. Solution: A self-contained hydraulic pumping system was developed to eliminate truck, loader, and additional operator. One transportation worker could perform the PMs alone.	Operations - Division 3	2006	Jesse Hansley	(910) 347-5223	Dollar Savings

Silt Fence Recycling	<p>Problem: Need to recycle silt fencing to save landfill space. Approximately 5000 LF of silt fencing is used annually in secondary road construction and typical section improvements.</p> <p>Solution: Sampson Maintenance began recycling the silt fence and storing it in the maintenance yard.</p>	Operations - Division 3	2006	L.E Reynolds	(910) 592-1434	Environmental Sustainability
Drainage Improvements	<p>Problem: Beavers were causing a drainage problem on several roads by building dams inside of crossline pipes.</p> <p>Solution: The maintenance department made several gates to prohibit debris from entering the pipe. The gates were built with #5 rebar and could be removed easily with a backhoe.</p>	Operations - Division 3	2006	L.E. Reynolds	(910) 592-1434	Labor Hour Savings
Truck Bed	The Department of Transportation is currently providing training in the form of a truck roadeo and a backhoe roadeo. The backhoe roadeo is a new event and a sandbox was needed during the training. The Sampson Maintenance department was given the task of building a metal sandbox. The materials and labor would exceed \$400. The conclusion was to use an existing pickup truck body of a wrecked pickup. The truck body is easy to maintain, very visible (DOT yellow) and very cost effective.	Operations-Division 3	2005	L.E. Reynolds	(910) 592-1434.	Dollar Savings
Ink Cartridge	<p>There is a program available with a local office supply store that will give a free ream of office paper for each printer cartridge turned in. This removes the old cartridges from the waste stream and provides Division 3 with copy paper for internal use within the Division.</p> <p>This program is in use within Division 3. There are approximately 200 printers within the Division. Each has an average of two cartridges that are usually replaced twice a year. The cost of a ream of office copy paper is currently \$3.29.</p>	Operations-Division 3	2005	L.E. Reynolds	(910) 592-1434.	Dollar Savings
Preplanning Typical Repairs	<p>The normal procedure for highway maintenance is to plan repairs as needed and perform preventive maintenance as much as possible. The traffic control during routine maintenance can be dangerous as well as counterproductive. The action taken to eliminate much of the routine traffic was to preplan and perform routine maintenance such as crack pouring, patching, overlays, shoulder repairs and ditch cleaning on roads that have been closed for bridge replacements.</p> <p>NC 403 and SR 1006 are normally two heavily traveled roads. Setting up and maintaining traffic control require a lane closure as well as a pilot truck. The local resident engineer was contacted to coordinate the work during the time of a bridge replacement on each of these two roads.</p>	Operations-Division 3	2005	L.E. Reynolds	(910) 592-1434.	Safety Improvement
Wiring an Existing Building	The building that is being used for the storage of salt, sand and signs had never been wired. This was causing a safety concern as well as delays when loading materials during the night. A local electrician submitted an estimate of \$4,904. Traffic Services in Wilmington was contacted to see if they could help. They would be able to provide lights, poles, breakers, receptacles and a panel box at no cost. These materials were salvaged from previous projects. The only expense would be for labor, equipment and wire	OPERATIONS - DIVISION 3	2002	Linwood Reynolds	(910) 592-6174.	Dollar Savings
Construction Debris Disposal Elimination	Concrete pipe and asphalt have been disposed of by hauling to the Duplin County landfill. The tipping fees for fiscal year 2000/2001 were \$29,305.20. We contacted S&W Concrete Company of Wallace and they agreed to let us haul all the concrete and asphalt to their business at no charge. S&W recently purchased a recycling machine and will recycle the material.	OPERATIONS - DIVISION 3	2002	Linwood Reynolds	(910) 592-6174.	Dollar Savings
Skilled Based Pay Testing	The Skill Based Pay-testing site in Wilmington was causing the participating Duplin County Maintenance Department employees to miss three hours each month in travel and testing time. This was causing a problem by disrupting crew activities due to a shortage of employees. Ms. Leary-Ezzell and I discussed the down time and she asked if it would be okay if the testing be performed in our office in Kenansville. I agreed and Ms Leary-Ezzell contacted Nancy McMillian (Div Three Testing Coordinator) and presented the idea. Ms McMillian obtained approval from Jackson Provost. I then discussed the idea with all employees and asked that they should take as many tests as possible and that we would cut the testing dates from 12 to 6 per year.	OPERATIONS - DIVISION 3	2002	Linwood Reynolds	(910) 592-6174.	Dollar Savings

Wilmington Satellite Laboratory	<p>There has been a tremendous increase in the number of projects in the Wilmington area that utilize drilled piers in the construction of structures. This trend is expected to continue over an extended time frame, resulting in a large quantity of concrete test cylinders generated for testing.</p> <p>The closest Material and Tests facility to these projects that can perform these tests is approximately two hours away, so a satellite laboratory was established in Wilmington that eliminated the time and use of a vehicle to transport the cylinders to Raleigh or Fayetteville.</p>	OPERATIONS - DIVISION 3	2002	Jack Cowsert	(919) 733-7088.	Dollar Savings
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